

BEYOND THE CLINIC

Understanding and Navigating Vaccine Hesitancy Among Veterinary Clients

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Everything old is new again, as the saying goes, and unfortunately in the United States that's true for vaccine hesitancy. The safety and efficacy of vaccines have been politicized over the last few decades, particularly since the COVID-19 pandemic, leading to increased hesitancy in our human population. In an inconvenient twist for small animal veterinarians, this resurgence is also coming at a time when groups such as ACVIM, AAHA, and WSAVA are increasing the number of vaccines considered core for the prevention of death and disease in dogs and cats. The competing pressures of increased client anxiety about vaccines, a greater number of vaccines recommended by guiding groups, and ongoing economic uncertainty can make a standard vaccine appointment seem like anything but.

WHAT IS VACCINE HESITANCY?

Vaccination is a core means of disease prevention in medicine for humans and animals. However, throughout the last 30 years there have been reports of rising vaccine hesitancy around the world. The rise of vaccine hesitancy and the modern antivaccination movement is commonly ascribed to 2 late-1990s phenomena: the questioning of the safety of the preservative thimerosal in childhood vaccines and the now-retracted and debunked manuscript by Wakefield et al attempting to link childhood vaccination to

autism.¹ Vaccine hesitancy is defined by the World Health Organization (WHO) as a “delay in acceptance or refusal of vaccination despite availability of vaccination services” and was named a top 10 threat to global health in 2019 by WHO.^{2,3} Importantly, vaccine hesitancy is a distinct entity from those who might describe themselves as “antivaxxers.” Whereas those who identify as “antivaxxers” are likely to outright reject all vaccines or a specific vaccine entirely, those who are vaccine hesitant have yet to make a decision on vaccination, often adopting a “wait and see” approach.

As such, vaccine hesitancy may stem from a number of factors and combinations of factors as well, which was addressed by the WHO Strategic Advisory Group of Experts (SAGE) on Immunization.⁴ Through a literature review of previously published works addressing vaccine hesitancy and using the members' combined expertise, the group devised a set of survey questions designed to measure vaccine hesitancy in adults regarding childhood vaccines.⁴ The working group emphasized that vaccine hesitancy may differ within a single person over time, with different vaccines, and/or in different contexts.⁴ One difficulty with the development of different scales for measuring vaccine hesitancy, including the SAGE scale, is the definition of discrete scores or measurable outcomes that define a truly vaccine-hesitant individual.⁵

HOW VACCINE HESITANT ARE COMPANION ANIMAL OWNERS?

Quantifying vaccine hesitancy amongst pet owners is difficult for a host of reasons and was largely understudied until the 2020s. The COVID-19 pandemic and subsequent vaccination efforts, or refusals, led to renewed interest in how people make decisions about vaccinations. Initially, a 2021 study surveyed veterinarians on reasons they perceived clients might be refusing or hesitating to vaccinate their animals and if they felt an antivaccination movement was prevalent in their area.⁶ It is difficult to know, however, if veterinarians' perceptions of their clients' motivations are correct.

A 2023 study by Motta et al surveyed dog owners across the United States on their attitudes and acceptance of canine rabies vaccines.⁷ In this study, a slim majority (53%) of owners reported feeling that vaccines administered to dogs were “unsafe, ineffective, and/or unnecessary.”⁷ Importantly, these owners were self-reporting their dogs' vaccine status and the survey instrument used lacked validation.⁷ Previous work has shown that owners often are unaware of which vaccines their dogs do and do not receive, meaning that owners might be unreliable reporters for their own dogs' vaccination statuses.⁸

Building upon the work of Motta et al, a more recent survey-based study by Haeder assessed attitudes toward canine, feline, and human vaccination amongst dog and cat owners across the United States.⁹ In contrast, this survey, which again relied upon owner recall of vaccination status, found that most pet owners felt vaccines were safe, important, and effective.⁹ This same author performed a similar study with an instrument validated for use in humans: the Parent Attitudes About Childhood Vaccines survey. They found that most dog and cat owners reported supporting their veterinarian's recommended vaccine schedule, wanted a potential new puppy or kitten to be fully vaccinated, had not avoided vaccines in a healthy pet, and believed that the diseases vaccines protected against were severe.¹⁰ However, a majority of both dog and cat owners had concerns or felt unsure about vaccine safety, adverse effects, and efficacy and felt that dogs and cats were receiving too many vaccines.¹⁰

Delving into why owners might make the decisions they do for their pets, Haeder asked these same participants questions about their relationship with their veterinarian and where they received vaccine

information.¹¹ Most dog and cat owners listed their veterinarian as their primary source of information for vaccines, regardless of whether they were categorized as trusting or less trusting of vaccination.¹¹ Additionally, more than half of those surveyed were categorized as having a high level of trust in their veterinarian.¹¹ How that trust translated to vaccination was partially correlated to the length of time the client had known the veterinarian, with relationships longer than 1 year and up to greater than 5 years resulting in an increased likelihood of vaccination.¹¹ In this survey, utilizing the internet as the primary source of vaccine information was negatively correlated with vaccination status, highlighting the potential negative effects of information easily available online.¹¹

In Wisconsin, the author surveyed dog owners at wellness appointments using the WHO Vaccine Hesitancy Scale adapted for dogs.¹² An advantage of this work was not relying upon owner recall of vaccination status and the use of a validated survey instrument. The author found that amongst 337 dog owners, hesitancy or declining a vaccine was most common for leptospirosis and Lyme disease.¹² For both vaccines, owners most commonly reported their reasons for declining or hesitating were a belief that the vaccine was not necessary, followed by concerns about the adverse effects of the vaccine and concerns about the cost of the vaccine.¹²

Thus, based on the published literature, the author's experience, and likely readers' own clinical experience, it can be deduced that clients largely trust their veterinarians; that clients with long-term relationships with their veterinary care providers are likely to take vaccine recommendations; and that a potentially large subset of clients have concerns about vaccine safety, efficacy, and adverse effects. If we imagine the likelihood that a client might accept a recommended vaccine as a continuum (**FIGURE 1**), true “antivaxxer” clients seem rare based upon surveys to date and are unlikely to be moved by a single visit.² Instead, efforts should focus on the hesitant clients in the middle of the continuum where the possibility of vaccine uptake or increasing vaccine confidence exists.²

PROTECTION MOTIVATION THEORY AND DRIVERS OF VACCINATION

Understanding why clients might be hesitant or refuse vaccines is an important first step. Beyond that, a basic understanding of how individuals might be motivated

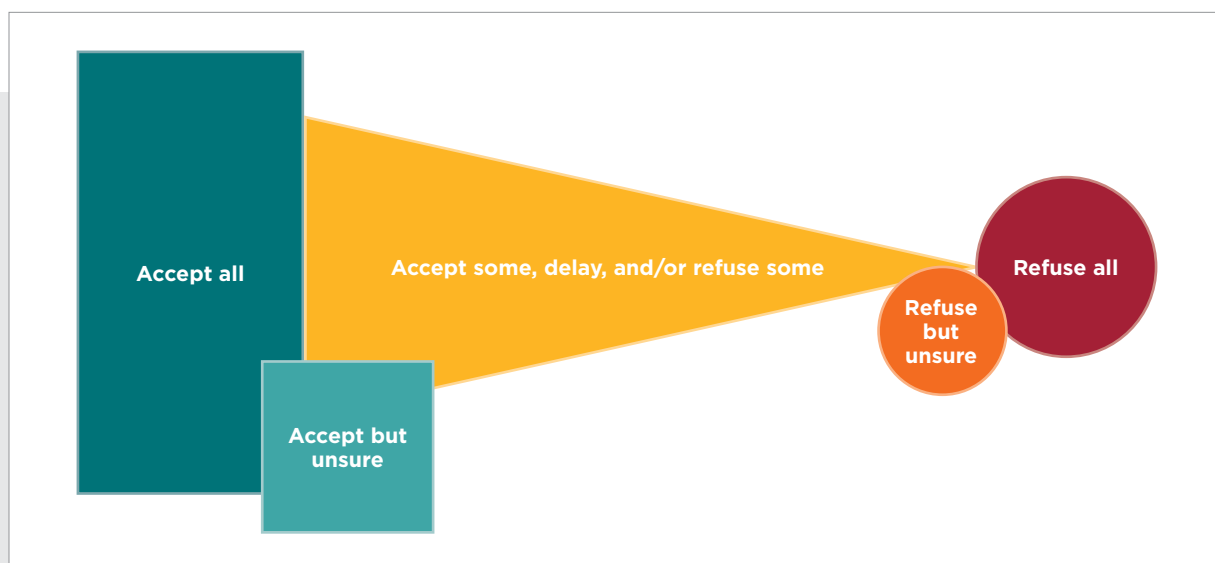


FIGURE 1. The continuum of vaccine hesitancy between full acceptance and outright refusal of all vaccines.²

to change their behavior in response to health threats is helpful. Protection Motivation Theory (PMT) is a framework for understanding how people make decisions about their health when fear appeals are utilized to prompt behavior change.¹³ In the theory, there are 2 parallel drivers of behavioral change: threat appraisals and coping appraisals. *Threat appraisal* refers to one's recognition of the threat along with its severity, how vulnerable they are to it, and potential rewards for not adopting the change. *Coping appraisal* refers to the belief in efficacy of the intervention, barriers to adoption, and self-efficacy: that is, that one can partake in the required intervention. An example regarding potential leptospirosis vaccination is shown in **TABLE 1**.

Of course, there are known to be many pressures outside of simple PMT that drive people to receive, or not receive, vaccinations. The WHO Behavioural and Social Drivers of Vaccine Uptake Taskforce used available data to illustrate these drivers (**FIGURE 2**).¹⁴ While PMT addresses the “thinking and feeling” drivers, some of the “practical issues” can be addressed within the clinic in the way veterinary professionals approach vaccination and clients.

WHAT DOES THIS MEAN FOR VETERINARIANS AND CLIENTS?

Overall, the available literature demonstrates that most clients trust their veterinarian and will accept recommendations for vaccination for their dogs and cats. For those clients with concerns, most concerns fall

under PMT framework items: concerns with vaccine efficacy and safety and perceived disease vulnerability. There is good news within this in that these are concerns veterinarians have the tools to address. Moving the needle toward vaccination for a family who simply isn't sure their pet is at risk for a particular disease is arguably easier than for a family who does not at their core believe vaccination prevents disease.

Veterinary professionals can double down on risk assessments being tailored to individual pets, leave time for vaccine conversations to better understand client concerns, and improve communication about available knowledge of risks related to vaccination. Several excellent studies have addressed risks of adverse events with vaccination of dogs and cats. In both dogs and cats, Moore et al found that risks of vaccine-associated adverse events (VAAEs) increased with the number of injections a pet received, not necessarily the number of antigens included in each vaccination—meaning multivalent vaccines did not necessarily lead to a greater VAAE risk.¹⁵⁻¹⁷ In dogs, VAAE risk within 3 days of vaccination was inversely proportional to body weight and highest in French bulldogs and dachshunds.¹⁵ In cats, young adult (approximately 1-year-old) neutered males receiving multiple injections were at the highest risk for VAAEs within a month of vaccination.¹⁷ Importantly, in both studies the overall risk was exceptionally low: 51.6 VAAEs out of 10 000 cats vaccinated and 19.4 VAAEs out of 10 000 vaccination visits for dogs.^{15,17} Finally, being mindful of nonvaccine options to help prevent disease,

TABLE 1 Protection Motivation Theory (PMT) in a Client's Potential Vaccine Decisions

PMT COMPONENT	OWNER'S POSSIBLE QUESTIONS/THOUGHTS
THREAT APPRAISAL	
Perceived severity	"How serious would it be if my dog got leptospirosis? Could it cause kidney or liver failure? Is it fatal? Could it spread to me or my family?"
Perceived vulnerability	"How likely is my dog to get leptospirosis? Do we live in an area where it's common? Does my dog go in ponds or areas with wildlife/rodents? Have cases been seen in our community?"
Maladaptive rewards	"What do I gain by not vaccinating? My dog avoids an extra shot. I save money. There is no risk of a vaccine reaction."
COPING APPRAISAL	
Response efficacy	"Does the vaccine actually work? Will it protect against severe disease? Will it reduce the risk to my family?"
Self-efficacy	"Am I confident I can get this vaccine for my dog? Can I afford it? Can I bring my dog in for yearly boosters? Will my dog handle the visit well?"
Response costs	"What are the downsides of vaccinating? Cost of the vaccine, possible side effects, needing regular boosters."

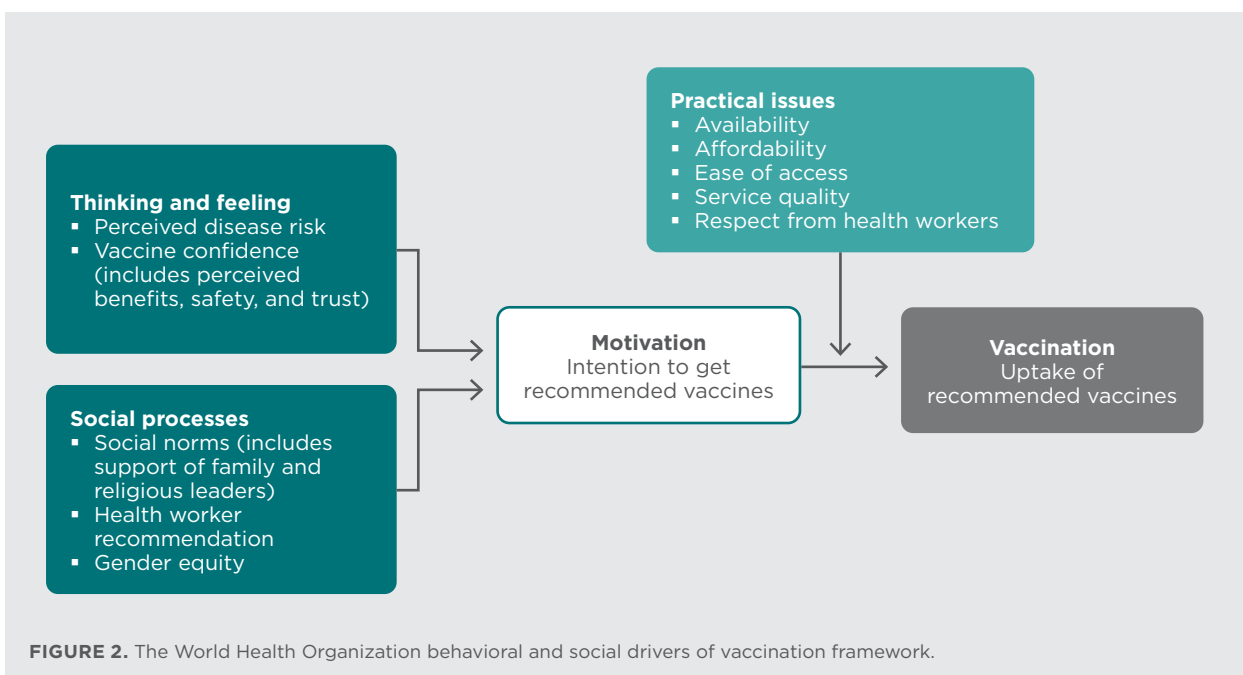
such as adequate ectoparasite prevention and titers for some vaccines, can help protect pets whose owners continue to decline vaccination.

SUMMARY

While more work is needed to fully understand why clients decline vaccines and the best interventions to increase vaccination uptake, veterinarians can work with the currently available data to help more families best protect their pets from disease. **TVP**

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